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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,959	10/15/2004	Fook-Luen Heng	BUR920040201US1	5958
45093	7590	10/11/2007		
HOFFMAN, WARNICK & D'ALESSANDRO LLC			EXAMINER	
75 STATE ST			KIK, PHALLAKA	
14TH FLOOR				
ALBANY, NY 12207			ART UNIT	PAPER NUMBER
			2825	
			NOTIFICATION DATE	DELIVERY MODE
			10/11/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOCommunications@hwdpatents.com  
btviplaw@us.ibm.com

**Office Action Summary**

Application No.

10/711,959

Applicant(s)

HENG ET AL.

Examiner

Phallaka Kik

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 and 31-36 is/are pending in the application, *wherein claims 25-30 have been canceled*.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 and 31-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This Office Action responds to Applicant's Amendment filed on 7/17/2007. Claims 1-24,31-36 are pending, wherein claims 25-30 have been cancelled and claims 2,5-6,13,21-22,32,34,36 have been amended. Claims 1-24,31-36 have been examined; however, Applicant's arguments are not persuasive. Therefore, the previous Office Action is incorporated herein.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-24,31-36** are rejected under 35 U.S.C. 102(b) as being anticipated by **Hall** (US Patent No. 5,936,868).

As per **claims 1,4,9,12,17,20,31,33,35**, all of the elements of the claims are summarized in col. 3, line 30 to col. 4, line 67, wherein the at least two problem objects (i.e., contacts, vias, polysilicon gates, bond pads, power rails and supply rails) are necessarily identified for which the scaling are applied, which are based on manufacturing process (see col. 3, lines 30-37), wherein the selective scaling steps include determining the particular scaling factor for each problem object, and different scaling technique is applied accordingly (i.e., downsizing or upsizing or particular downsizing/upsizing associated with the particular type of problem objects) using the

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different or various scaling factors determined or selectively determined for each of the problem object, wherein such scaling factors are technology ground rules and methodology constraints dependent, including the particular compensation, new ground rule or scaling multiplier as related to the particular manufacturing process being updated or converted to and for which the particular type of objects under consideration; wherein these objects are identified and are corrected based on the manufacturing process/data (see col. 3, lines 30-53), wherein since these particular structures are "selectively" subjected to the particular scaling technique/method (see col. 3, line 54 to col. 4, line 68), these particular structures are identified for correction; wherein the possible placement and routing are part of the replacement as described in col. 5, lines 1-10, which could involve the conventional art of placement and routing as further described in col. 1, lines 10-67; wherein the since the method is a computer-implemented method (see col. 1, lines 1-67), the system, means, computer program product, computer useable medium, program code are part of the computer-implemented method being necessary to implement the computer implemented method.

As per **claims 2-3,10-11,18-19**, all of the elements of claims 1,9,17 from which the respective claims depend, are discussed in the rejections of claims 1,9,17 above, wherein the object problem object being a layer, region and/or cell to which the corresponding hierarchical scaling program/method is applied is further described in col. 6, lines 28-36, 55-67 and col. 4, lines 32-37.

As per **claims 5-7,13-15,21-23,32,34,36**, all of the elements of claims 1,9,17,31,33,35 from which the respective claims depend, are discussed in the

rejections of claims 1,9,17,31,33,35 above, wherein the further step/means for manufacturing, testing manufactured circuit and generating the manufacturing information are further described in col. 9, line 454 to col. 10, line 43.

As per **claims 8,16,24**, all of the elements of claims 1,13,17 from which the respective claims depend, are discussed in the rejections of claims 1,13,17 above, the evaluation step/means is further described at least in col. 9, lines 54-65.

***Remarks***

4. The objections of **claims 2,5-7,13-16,21-22,32,34,36** due to the noted minor informalities are withdrawn as being corrected by Applicant's amendment filed on 7/17/2007.

5. As per **claims 1-24,31-36**, Applicant argued that Hall does not disclose manufacturing information and thus does not identify problem objects of the original design layout based on manufacturing information, wherein Hall does not disclose identifying "problem objects", instead Hall identifies particular structures, e.g., vias, supply rails, etc., to scale, but not a "problem object" in the layout, which may be a layer, region or cell according to the explicit definition in the present application, and wherein a target object for the scaling in Hall is not necessarily a "problem object", which are difficult to manufacture or present process defects. Applicant also argued that Hall only discloses downsizing or upsizing a structure, which are only goals or result (or directions) of scaling, but not scaling techniques to achieve the goals/results; and further the division of one elongate contact into a plurality of generally square contacts is also a goal or a result of scaling, but not a scaling technique. The Examiner

is not persuaded. First of all, "problem object(s)" is very broad term and could be any object, including the particular structures of Hall, which have problem(s) (i.e., design rule violation, causing manufacturing defect or incompatibilities, etc.), wherein vias or elongated contacts or supply rails are at least cells or layers conforming to the explicit definition in Applicant's specification (see [Par 47]) that an object means a layer, region or cell, contrary to Applicant's assertion. Secondly, these objects in Hall have problems. Otherwise, there would not be a need to apply the method/system of Hall. These objects are then identified and are corrected based on the manufacturing process/data (see col. 3, lines 30-53), wherein since these particular structures are "selectively" subjected to the particular scaling technique/method (see col. 3, line 54 to col. 4, line 68), these particular structures are identified for correction. Thirdly, the term "scaling techniques" is also vague, which could be interpreted as a type or kind of scaling, which would include any method, procedure or process for performing the scaling. Although the Examiner agrees that downsizing, upsizing, and/or changing an elongated contact into a plurality of squared contacts can be considered as "goals", such downsizing, upsizing, and/or changing an elongated contact into a plurality of squared contacts can also be considered as a method, process or procedure to accomplish these goals, wherein the disclosure of Hall does not just provide or choose the goals, but includes the means for accomplishing those goals; thus providing the "scaling techniques" as claimed.

6. As per **claims 31, 33 and 35**, Applicant argued that Hall does not disclose that "the scaling factor includes at least one of a compensation and a new ground rule"

wherein Hall only discloses scaling a component in an IC (col. 4, lines 1-2) and/or dividing an elongate contact into multiple generally square contacts (col. 4, lines 16-19), but does not include a compensation or a new ground rule. The Examiner is not persuaded. As clearly stated in Hall, the "other objects, features and advantages in accordance with the present invention are provided by a method for converting an original IC design for an original manufacturing process to an updated IC design for an updated manufacturing process by accessing a database comprising mask data for the original IC design and manipulating the data by various scaling steps and other modifications." (see col. 3, lines 39-53). In converting the IC design to conform or be compatible with the requirements of the new or updated manufacturing, various scaling steps and other modifications are involved, which includes the particular scaling factors (see col. 4, lines 1-8), wherein these scaling factors are in effect a compensation means or new ground rule, to adapt the original IC design so that it will be correctly manufactured using the updated manufacturing process.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phallaka Kik whose telephone number is 571-272-1895. The examiner can normally be reached on Monday-Friday, 8AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**Any response to this action should be mailed to:**

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

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**or faxed to:**

571-273-8300

/Phallaka Kik/  
Primary Examiner, A.U. 2825  
September 29, 2007